

Biological Control of Vine Mealybug and European Grapevine Moth

ARS LOCATION:

European Biological Control Laboratory
Campus International de Baillarguet
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PRINCIPAL INVESTIGATOR:

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PROJECT OBJECTIVES:

1. Explore for natural enemies of vine mealybug (*Planococcus ficus*) and European grapevine moth (*Lobesia botrana*).
2. Identify, colonize, and evaluate the most promising natural enemies and ship them to United States cooperators. Results of laboratory (including genetics and behavior) and field studies will be used to improve the ability to predict key factors for application to future programs.

MAJOR ACCOMPLISHMENTS (2007–2010):

Genetic range of European grapevine moth:

Made collections from 28 locations throughout Europe for genetic analysis by Kent Daane at University of California Berkeley.

Identification and release of biocontrol agent of vine mealybug:

Discovered the larval parasitoid encyrtid wasp, *Anagyrus pseudococcii*, and developed it for mass release in California, where it has been used extensively.

TECHNOLOGY TRANSFER/OUTREACH:

Mass release of biocontrol agent in California.

EXTERNAL SUPPORT: None

COLLABORATORS:

Kent Daane, University of California Berkeley, Berkeley, CA; Alma Solis, ARS, Beltsville, MD; Stefan Dano, Agricultural University of Tirana, Tirana, Albania; Vili Harizanova, Plovdiv Agricultural University, Bulgaria; Massimo Cristofaro, Biotechnology and Biological Control Agency, Rome, Italy; Michael Pitcairn, California Department of Food and Agriculture, Sacramento, CA.

RECENT PUBLICATIONS:

- Daane, K.M., Yokota, G.Y., Hutchins, J., Cooper, M.L., Middleton, M.C., Romero, D., Pryor, M., Hashim-Buckey, J.M., Zaiezo, T., Fallahzadeh, M., Godfrey, K., Sforza, R., Bentley, W.J., and Varela, L.G. 2010. Sustainable controls for the vine mealybug. America Vineyard Foundation Annual Reports, 2009 Crop Season. Napa, California. United States. 24 pp.
- Maugin E, Sforza R. 2006. Suivi de la cochenille *Planococcus ficus* dans le vignoble Languedocien pour la lutte biologique. Conférence AFPP sur l'entretien des espaces verts, jardins, gazons, forêts, zones aquatiques et autres zones non agricoles. Avignon, 11-12 October 2006, pp 829-840.

- Sforza R., Kirk A., W.A. Jones 2005. Results of foreign exploration for natural enemies of *Planococcus ficus*, a new invasive mealybug in Californian vineyards. 7ème Conférence Internationale sur Les Ravageurs en Agriculture, Montpellier, France 26 et 27 October 2005. 8pp.